ENTOMOLOGY.[1]

Some Observations on the Distribution of Coccidæ.[2]—Being now in the midst of preparing a new list of the known Coccidæ, with notes as to food-plants, distribution, etc., I have thought it opportune to submit to you a few observations which seem to me to be of interest, relating to the geographical distribution of the several genera. In preparing these notes, I have, moreover, been moved by a lively hope that some of you who have so much unpublished information regarding this group of insects, may be induced to throw a little fresh light on points which are now obscure. More especially do I refer to the numerous undescribed species which must doubtless exist in the collections at Washington, information of which would so greatly help to fill up blanks now too apparent to those who read our lists with a critical eye.

The following genera, some of them not very well established, are monotypic according to present information.

Walkeriana Sign.; Ceylon.
Guerinia Sign.; Mediterranean Region.
Tessarobelus Montr.; New Caledonia.
Drosicha Walk.; Ceylon and China.
Llaveia Sign.; Mexico.
Nidularia Targ.; Europe.
Capulinia Sign.; Mexico.
Cerococcus Comst.; Arizona, California.
Xylococcus Löw; Austria.
Callipappus Guèr.; Australia.
Rhizœcus Künck., in hort (from Australia?).
Puto Sign.; Europe.
Tetrura Licht.; Europe.
Cryptococcus Dougl.; Europe.
Signoretia Targ.; Europe and Australia.
Fillippia Targ.; Europe.
Pseudopulvinaria Atkins.; Sikkim.
Vinsonia Sign.; West Indies, etc.
Physokermes Targ.; Europe.
Aclerda Sign.; France.

[1] Edited by Clarence M. Weed, New Hampshire College, Durham, N. H.
[2] Read before the Entomological Society of Washington, Oct. 11, 1894.

Spermococcus Giard.; France.
Exœrctopus Newst.; Channel Is.
Ericerus Guèr.; China.
Fairmairia Sign.; France.
Ischnaspis Dougl.; West Indies, etc.
Frenchia Mask.; Australia.

Of the above twenty-six monotypic genera, most of which are undoubtedly valid (seven, perhaps, might be questioned), it will be seen that just half are European, four are Oriental, four appear to belong to the Australian region, two are Mexican, two are marked as from the West Indies, etc., and one is from the arid portion of the United States.

Signoretia offers a singular case, the European species being represented in Australia by a form which Maskell separates from it only as a variety. Supposed endemic species of *Signoretia* from Australia and New Mexico prove to belong to *Pulvinaria* and *Bergrothia* respectively; and it is difficult to avoid the conclusion that *S. luzulæ* var. *australis* Maskell, from Australia, must be *S. luzulæ* which has been introduced and has varied from the type under its new environment. If so, the matter deserves the close attention of evolutionists.

It is curious that the common *Physokermes* of Europe has no representative here in America. We have two species of *Lecanium* on conifers, one in Canada, the other in California, but they are not like *Physokermes*.

So, also, we seem to have no representative of the subterranean European genera, *Aclerda*, *Spermococcus* and *Exœrctopus*. Do our ants' nests never harbor such?

Fairmairia has a close ally in northern Mexico and New Mexico in *Ceroplastodes*—the latter with two species. A curiously similar case is offered by *Lichtensia*, which has one species in Europe and another in Vera Cruz, Mexico. The latter, one of the most beautiful of Coccidæ, from its brilliant yellow color, cannot be made the type of a distinct genus, though it is very different from its European congener.

Vinsonia and *Ischnaspis* (the latter near to *Fiorinia*) are common on cultivated plants in the West Indies, but the specimens offer no chance for the separation of even varieties. *Ischnaspis*, it will be noted, is the only monotypic genus of Diaspinæ.

The Monophlebinæ appear to be ancient forms, probably at one time more abundant than now. They have been found fossil both in Europe and America; and the existing genera are represented by comparatively few species widely scattered over the earth, after the

manner of *Peripatus*. Thus, *Palæococcus*, to which the fossil species are assigned, has three living species, one in Europe, one in South America and one in New Zealand.

Ortonia has also three species; one from Natal, the other two neotropical.

Icerya appears to be neotropical, Oriental and Australian; and there is an allied genus or subgenus, which I hope Prof. Riley will soon describe, found here in New Mexico.

Porphyrophora is considered Palæarctic, but has its representative in America in *Margarodes*, with one West Indian and one Chilian species. *Cœlostoma* is confined to Australia and New Zealand, and thus forms an exception among the polytypic monophlebid genera; but *Monophlebus* is recorded from widely separated countries in the Eastern Hemisphere.

Gossyparia has five species, two Palæarctic, two Australian and one from New Zealand—truly a curious distribution!

Eriococcus is interesting. Six species are Palæarctic; Australia and New Zealand together have no less than sixteen, only one of which is common to both these countries, and then the Australian form is a distinct variety of a New Zealand species. No other species whatever are known except three from North America, two of which, *E. azaleæ* and *E. coccineus*, cannot well be native there. In the West Indies, where *Dactylopius* abounds, no *Eriococcus* has been ever seen.

Rhizococcus presents one Palæarctic species, three from Australia and six from New Zealand. We seem to have in this country two undescribed species, however.

Bergrothia, which is very near to *Dactylopius*, has one Palæarctic species; while two very nearly allied forms are found in New Mexico, and referred by me to the same genus. Still another is reported from Indiana, etc., but is undescribed.

Dactylopius seems to be rich in species in most parts of the world, but becomes rare and is supplanted by *Phenacoccus* in the northern parts of the Palæarctic region, such as England. The neotropical species are numerous, but the nearctic forms are singularly few, and (excepting introduced ones) all western. Mr. Coquillett has described them, and I have sent the description of a fourth to the printer. There are nine known species from Australia and eight from New Zealand; for the most part these differ in type from the neotropical forms, so that it might be proposed to place them in a distinct subgenus. The genus *Dactylopius*, as now understood, contains very divergent forms, but great difficulty is felt in any attempt to separate it into subgeneric groups.

Phenacoccus is rich in Palæarctic species, there being eleven or twelve, several recently (1886–1891) described. In strong contrast, we have but two endemic nearctic species, both western. There is not one from the neotropical region, but Australia furnishes two and New Zealand one.

Ripersia has five Palæarctic species, three from New Zealand and one from Australia. It was thought that we had none in America, but Mr. N. Banks has discovered a most remarkable maritime species, the description of which now awaits publication. It is very closely allied to one (*R. rumicis*) from New Zealand.

Coccus has three races, perhaps not very distinct as species, from the warmer parts of North America, extending northward in the Rocky Mountain Region. *C. agavium* may be referred to a distinct genus, *Gymnococcus* of Douglas, which should be added to the list of monotypic genera above. Its native country is unknown.

Kermes has several Palæarctic species; one Ethiopian, not yet described; one Australian; and a problematical number nearctic. In the last mentioned region only a single species has been described, but others exist and sorely need attention. No species are neotropical.

Orthezia is doubtless an old form, and certainly a very interesting one. The number of Palæarctic species is a matter of dispute, but there are not over half a dozen. Four are nearctic; and here it may be mentioned that Prof. C. H. T. Townsend has just discovered a beautiful new one in Sonora. Two are neotropical, both described by Douglas. None were known from the Oriental region, until the other day Buckton described one from Ceylon. Not one occurs in Australia or New Zealand.

Prosopophora was described as lately as 1892, but already we know four species, one neotropical, one nearctic (New Mexico), and two from Australia.

Tachardia has four American species, one still awaiting publication. There is, also, one from the Oriental region, while three are Australian.

Pulvinaria is rich in Palæarctic species, but the endemic nearctic species are only three or four! Four are neotropical; two (one undescribed) Oriental; four Australian; and one is from the Sandwich Is. The absence of native species in New Zealand is noteworthy.

Ctenochiton, with eleven species, and *Lecanochiton*, with two, are strictly confined to New Zealand; and may be set off against the numerous extraordinary gall-making forms of Australia, which are wanting in the New Zealand fauna.

Inglisia has five New Zealand species, and until last year was supposed to be confined to that island. But in 1893 Mr. Maskell described one from Australia, while this year I have described a species from Trinidad in the neotropical region.

Ceroplastes has its metropolis in the neotropical region, with thirteen supposed species, some of the most doubtful validity. One only is native in the nearctic region, and that to the south (New Mexico and Northern Mexico), as *C. rusci* is in Europe. One is Ethiopian, two Australian, and two Oriental. Of the last mentioned, *C. ceriferus*, which produces the Indian White Wax, appears to be also widely distributed in the neotropical region. Can it be a survival in both regions, like the tapir—though not, like that, differentiated into species?

Lecanium presents nearly 90 species, several of which, however, may not be valid. The *Eulecanium* series is abundant and widely distributed in the Palæarctic and nearctic regions, but I do not know a single *Eulecanium* from elsewhere. In the tropics the *Bernardia* section, with few but very destructive species, takes its place. The neotropical species, when we eliminate those introduced from elsewhere, amount to only eight, only one of which (*begoniæ*) is a *Bernardia*, and the endemic character of that is a matter for serious doubt. But who shall say that *L. oleæ* and *hemisphericum*, which belong to *Bernardia*, are not neotropical, since they are now so widely spread that their native country cannot be learned? The Oriental species, so far as endemic, are but six, while three peculiar forms are recognized as endemic in Australia. In New Zealand, Mr. Maskell has found but one new species, and that is extremely near to *L. oleæ*.

The above notes will suffice for the purpose intended, though many genera, including the Diaspinæ, are passed over. Defective as our knowledge is, we seem to see some glimmering of light, which should spur us on to further discoveries which will give a sound foundation to our knowledge of Coccid distribution.—T. D. A. COCKERELL, New Mex. Agr. Exper. Station.

Securing Moth's Eggs.—J. B. Lembert describes[3] the following method of securing eggs of moths: "When I take an *Arctia ornata* ♀ and she is ready to lay eggs, the moment she shows signs of being stupefied in the cyanide bottle, I take her out, close the wings over her back, and place her in a paper envelope; as soon as she revives she will commence to scratch the paper with her legs; I then shake the envelope, and if she has given up some eggs, I take them out, give her

[3] Can. Entomologist, June, 1894.

another dose of cyanide fumes, and when she revives a second time I have found as many as 125 eggs in the paper." The method has also been successfully used in securing the eggs of butterflies.

American Species of Seira.—In a paper on the American species of the Thysanouran genus Seira[4] Prof. F. L. Harvey describes *S. mimica* n. sp., which resembles *S. nigromaculata* Lubbock, but differs in the color and the arrangement of the color patches. It is found in warm, dry situations about buildings. *S. bulkii* Lubbock was also found at Orono, Me., under conditions which indicated that it was indigenous.

Kentucky Orthoptera.—Prof. H. Garman publishes, in the Sixth Annual Report of the Kentucky Agricultural Experiment Station, a valuable list of the Orthoptera of that State. In introductory paragraphs he makes the following remarks which are of general biological interest:

"The fauna of the State presents no well-marked features of its own. The eastern half of the State evidently forms part of an eastern zoological region, while the western half is as evidently southern in general character. The species occurring within our limits fall under five categories, as follows: (1) Those which occur everywhere in the United States, such as *Gryllus abbreviatus, Hippiscus rugosus, Chortophaga viridifasciata, Pezotettix bivittatus, P. femurrubrum* and *P. atlanis.* (2) Those which belong to the eastern region, represented by *Acridium alutaceum, A. rubiginosum* and *Paroxya atlantica.* (3) Southern species, such as *Schistocerca americana, Anisomorpha buprestoides* and *Stagmomantis carolina.* (4) Western species, such as *Pezotettix differentialis* and *Mestobregma cincta.* (5) Cave species, of which we have three.

"In Eastern Kentucky the fauna is, as a whole, eastern and northern in character, rather than southern, probably because of the greater elevation above sea level of this part of the State. The southern species show a marked increase in abundance in this section as one approaches the southern boundary of the State. Here the northern limit of the Austroriparian region may be said to coincide with the boundary between Kentucky and Tennessee, and so continues to the headwaters of the Barren River, where a sharp northward extension occurs, bearing gradually northwestward, and following along the eastern limits of our western coal fields to enter southern Indiana and

[4] *Psyche*, Nov., 1894.

Illinois. I could not perceive any very decided southern features of fauna or flora at Campbellsville and Greensburg, near the headwaters of Green River. At Bowling Green and Glasgow Junction the southern character is decided. At Elizabethtown, farther north and east, the fauna and flora do not appear to be very different in relative abundance of species from those of the region about Lexington. The eastern limit of the northward extension of the Austroriparian region would thus appear to follow approximately the meridian marking the 86th degree of longitude west from Greenwich, and accompanies a fall in altitude to about 500 feet above sea level, the blue-grass region to the eastward being in the neighborhood of five hundred feet higher than the region west of Leitchfield. This western region is marked not only by an increased abundance of southern Orthoptera, but quite as decidedly by its other insects, its plants, and its vertebrate animals. Among Lepidoptera, *Callidryas eubule* and *Euthisanotia tamais* become noticeable. The water moccasin (*Ancistrodon piscivorus*) and the shining bass (*Centrarchus macropterus*) appear. There is a decided increase in the numbers of such birds as the tufted titmouse, summer redbird and scarlet tanager.

" We find here the spider-lily (*Hymenocallis occidentalis*), the American aloe (*Agave virginica*), the willow oak (*Quercus phellos*), the water-locust (*Gleditschia aquatica*) and the Mississippi hackberry (*Celtis mississippiensis*).

"Among the Orthoptera found in this end of the State two are worthy of special mention because their occurrence is in some respects exceptional. *Mestobregma cincta* is recorded by collectors from Colorado and Wyoming. Dr. Cyrus Thomas obtained examples from Southern Illinois. I recently collected specimens at Glasgow Junction and Bowling Green in this State. I have no record at hand relating to its occurrence in regions between these widely separated eastern and western habitats. The second species is *Pezotettix differentialis*, the

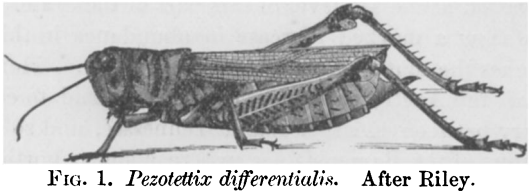

FIG. 1. *Pezotettix differentialis.* After Riley.

large olive grasshopper so common in the northwest. It appears to be one of a relatively small number of northern species whose distribu-

tion is extended to the southward by the influence of the Mississippi River. The species is one of the commonest Illinois grasshoppers. It is common locally in Western Kentucky, but has not been seen eastward.

"The peculiar cave Orthoptera of Kentucky are deserving of a word in this connection. The species are all wingless crickets with greatly enlarged hind limbs for leaping, and excessively lengthened antennæ. All have eyes of the usual size, and without exception live by preference near the cave mouths. The species most completely adapted to life in the caves is the cave cricket (*Hadenœcus subterraneus*). It is a large brown creature, so fragile that it is almost impossible to get perfect specimens. Specimens taken alive from the caves in summer, invariably died, probably because of the sudden change of temperature. I am disposed to think they could be removed in cool weather without difficulty. I have never seen this species anywhere but in caves. It occurs in all our larger caverns, however. A second species (*Ceuthophilus stygius*) resembles the preceding in general form, but has the legs and antennæ less lengthened, and is spotted with black. It is closely allied, both in structure and color, with species occurring out of doors under rocks. It is more closely confined to the region near the entrance of caves than is *Hadenœcus subterraneus*, but appears not to leave the caves. These two are the only cave crickets I have seen in Kentucky, but Dr. A. S. Packard, of Brown University, has obtained a third, which he says is associated in caves with the preceding. I have a number of specimens that agree perfectly with his description of this cricket, but they were found in every case under rocks or logs out of doors."

Coleoptera of Lower California.—At a recent meeting of the Cambridge Entomological Club, Dr. G. H. Horn discussed this subject.[5] He remarked "that about 800 species were now known to him from the region which may be divided into four faunal provinces: (1) The San Diego fauna extends down the larger part of the west coast. (2) The fauna of the highlands (so far as collected, *i. e.*, north of the middle of the State) seems to be related to that of the Central California Valley. (3) The fauna of the east coast extends through Arizona northward, and eastward down the Rio Grande. (4) The fauna of the extreme southern end of the peninsula is truly tropical in character."

New Fossil Beetles.—Mr. S. H. Scudder calls attention[6] to a

[5] *Psyche*, Nov., 1894.
[6] *Psyche*, Nov., 1894.

new family of fossil beetles established by Schlechtendahl in a recent paper on the fossil insects of Rott on the Rhine (Abh. Naturf. Ges. Halle, XX). It is named Paleogyrinidæ, and the type shows a combination of the characters of Gyrinidæ and Dytiscidæ. "Extinct types of insects of as high a grade as families are extremely rare in the tertiaries."

Reversal of Position in Insect Embryos.—Dr. G. A. Chapman summarizes[7] his own and others' observations on the phenomena associated with the change of position that occurs in the young lepidopterous larvæ within the shell before hatching. "In all cases the larva first appears on the surface of the yelk-mass as a flat plate, of which the central line is the middle of the ventral surface, and the margins are the two sides of the dorsum, still far apart. These margins, however, rapidly curl in and, at the head and tail, the young embryo soon has the cylindrical form we associate with the larva, but centrally, there remains a wide opening through which the mass of the yelk is continuous with that portion of it contained in a central cavity of the larva; this central cavity is the future alimentary canal, not yet provided, however, with any opening towards either the head or the tail. The communication between the intestinal cavity and the yelk sac gradually becomes smaller, and portions of yelk leave the sac and pass into the intestine, and contribute to the growth of the embryo. During this period, it is easy, in flat eggs like those of the Pyralides, Tortrices, Limacodes, etc., to see the embryo curled around a greater or less portion of the yelk sac, with its ventral surface towards the margin of the egg, and its dorsal surface (aspect rather than surface, as the surface is still broken by the umbilical opening) applied to the yelk sac. There is a little variation in the degree to which the yelk disappears before the umbilical opening closes, but when this takes place the larva forms a horseshoe or circle, with the venter towards the shell wall and its anterior and posterior extremities in contact. At this period, also, there are a varying number of globules of yelk free in the egg cavity around the larva; whether these are set free by the movement of the larva that now takes place, or still later by the jaw action of the larva, I am not sure, but after the movement has taken place the young larva swallows these; this swallowing of the remaining yelk may indeed be regarded as a first step towards eating its way out of the egg. Before the closing of the umbilical opening, the embryo may be regarded as an appendage to the yelk sac, attached thereto by its

[7]Entomologist's Record, Oct. 15, 1894.

dorsal aspect. As soon as the opening closes, however, the young larva is truly a young larva, possessing no organic connection with the other egg structures. The first use it makes of its liberty is to bend the tail forwards and, as it were, creep up its own ventral surface, assuming in this process an S or pot-hook shape, until at length its position is reversed, the dorsum being now along the circumference of the egg and the venter being central. The head and tail sometimes merely meet in the (flattest eggs), sometimes slightly overlap, whilst, in the dome-shaped eggs the head so overlaps as to take very often a central position in the vertex of the egg, forming a dark spot there, as in Acronycta, Skippers, and many others.

"The essential importance of this observation is, that it shows that the embryonic position of the nervous system is the same in insects as in vertebrates, and since it must, therefore, be identified also in the mature animal, it follows that the venter of insects corresponds anatomically with the dorsum of vertebrates, and *vice versa*.

"As regards the actual change of position itself, and the position afterwards taken by the larva, it seems to me that the important point is that the larva whilst still truly an embryo, that is, whilst still attached to the yelk and egg structures, has the venter outwards, and the dorsum towards the center of the yelk or egg; but when it becomes free it is no longer an embryo, it moves how it likes, and through the position it takes up seems to be very uniform throughout each species and and even throughout whole families; still this has little, if any, embryological significance. I have frequently seen larvæ making this S movement, and though I have called it 'creeping up its own ventral surface,' it goes on slowly, without any apparent voluntary or even movements, and appears to be due to the mere force of the growth and development of the larva. Sometimes it seems as if the lengthening of the larva led to the extremity of the tail impinging against the side of the egg-shell and instead of sliding onwards, being caught and bent up. It is associated no doubt with the completion of the growth of the dorsal surface previously defective by the large umbilical opening, and now more abundant in proportion to the ventral surface. It proceeds slowly and steadily, so that usually some progress may be noted in five or ten minutes.

"Very shortly after, what appear to be voluntary movements of swallowing take place, the remainder of the yelk disappears, and the remaining fluid is either absorbed by the larva through the skin, or evaporates through the shell; the tracheæ become visible by getting filled with air, and the larva begins the process of eating through the shell."

Cecindelid Larvæ.—H. F. Wickham describes[8] the larva of Cecindela as "a somewhat elongate, whitish grub, with a broad, metallic colored head and prothorax, and a large hump, bearing two hooks, on the fifth abdominal segment. They excavate holes in sunny spots and lie in wait for prey, with the head closing up the mouth of the burrow; when an insect comes within reach, it is seized by the long jaws of the larva and the juices extracted. I am now rearing larvæ of *C. limbalis* Klug, which I dug from holes in a clay bank on the fifteenth of April. They are easily kept in little tin boxes with damp earth, and feed readily on soft-bodied larvæ of wood-borers. The pupa is figured by Letzner and is represented as bearing on the fifth abdominal dorsal, two spines corresponding to the hooks on the same segment in the larva."

Social Economy of the Hive Bee.—In a recent presidential address before the Biological Society of Washington, Dr. C. V. Riley described the social organization of the hive bee.[9] "Each bee," he said, "labors for the good of the commonwealth of which it is a member. Of them it might well be said:

Salus rei publicæ lex.

It is the welfare of the colony which directs the actions of all, and not the will of the queen. Indeed, it would seem that the latter performs her important function—that of supplying the hive with eggs—only when the workers will it, their own condition of prosperity as regards stores, or their anticipations of the future needs of the colony as regards population, causing them to supply the queen liberally with food rich in nitrogen—a partially digested substance, or a gland product, or perhaps, a mixture of both, which she alone cannot produce, yet without which any considerable production of eggs is an impossibility. As Evans remarks:

'The prescient female rears her tender brood
In strict proportion to the hoarded food.'

"We must, then, credit the industrious and provident workers with the chief influence in shaping the policy of the hive. They are the *servum pecus*—the living force—of the colony. And to the end that order and efficiency of effort may prevail, they have, we find, a marked division of labor. In the normal condition of the hive the young workers care for the brood—a labor which they take upon themselves

[8] Can. Entomologist, June, 1894.
[9] Insect Life, September, 1894.

within two or three days after issuing from the cell. The glands which secrete a part of the food required by the developing larvæ are active during the earlier part of the life of the worker. Later, these nurses become incapable of doing their work well as the gland system becomes atrophied. When a few days old they take short flights, if the weather favors, but seldom commence gathering stores before they are fifteen days old. Wax production is more essentially a function of the workers in middle life, and it is particularly noticeable that those bees fashioning the wax into combs are principally of this class. Many of those acting as foragers do, however, secrete wax scales, which are doubtless, in the main, utilized. Among the outside workers and hive defenders some bring honey only on certain trips or for a time, others honey and pollen, others water, and yet others propolis or bee glue to stop up crevices and glue things fast. Meanwhile, some are buzzing their wings at the entrance to ventilate the hive, and others are removing dead bees, dust or loose fibers of wood from the inside of the hive or from near the entrance, or are guarding this last against intruders, or perhaps driving out the drones when these are no longer needed."

Notes on New Hampshire Lepidoptera.—Mr. James H. Johnson, Pittsfield, N. H., in a letter to the editor of this department, recently, included the following notes on Lepidoptera in his region: "I have one specimen of *Colias interior* from Charlestown. This, I notice, Maynard calls 'accidental at Waterville, Me.' One specimen of *Debis portlandia* I took at Webster, one *Limenitis arthemis* (*proserpina*) at South Sutton, one *Thanaos brizo* and several of *Neonympha eurytris* at Charlestown. I have a pair of the *Chionibas jutta* from Orono, Me.

"Of the moths, I have one each of *Catocala relicta* and *C. relicta* (*bianca*) one pair of *Eacles imperialis*. These three were taken at South Sutton, Va. I find *Eucronia maia* is quite common in one place here at Pittsfield. Have not noticed it elsewhere. I see Dr. Harris called it rare in Mass."

Hemiptera of Buffalo.—One of the most valuable of recent faunal lists has just appeared in the Bulletin of the Buffalo Society of Natural Sciences (Vol. V, No. 4). It is "A List of the Hemiptera of Buffalo and Vicinity," by Edward P. Van Duzee. It "enumerates all the described Hemiptera to and including the Jassoidea known to inhabit the vicinity of Buffalo, N. Y. The limit of 70 miles, adopted by

Mr. David F. Day in his Catalogue of the Plants of Buffalo and Vicinity, has been followed by the author * * * but nearly all the species have been captured within a radius of 20 miles of this city." The Psyllidæ, Aphididæ and Coccidæ have not been included in the list which enumerates 378 species, and mentions 25 undescribed species that have been found.

In the same Bulletin Mr. Van Duzee publishes Descriptions of some New North American Hemipterous Insects, belonging to the following genera: Idiocerus, Platymetopius, Allygus, Deltocephalus, Athysanus, Entettix, Scaphoideus, Thamnotettix, and the new genera here characterized, Tinobregmus and Xestocephalus.